

WE CLAIM:

1. A method of scanning an oversized document having a front portion and a rear portion, the oversized document having an area dimension in excess of a document scanning area of a line scanner, comprising:

advancing the front portion of the oversized document a sufficient distance in a forward direction to place the front portion of the oversized document inside the scanning area of the line scanner but not a sufficient distance to place the rear portion of the oversized document inside the scanning area of the line scanner;

moving the line scanner in a perpendicular direction to the oversized document to capture indicia information disposed on the front portion of the oversized document;

positioning the line scanner in a target area below the front portion of the oversized document for capturing a line of indicia information disposed on the front portion of the oversized document;

advancing the front portion of the oversized document in a direction perpendicular to the motion of the line scanner in a series of predetermined exposure intervals to determine the distance the oversized document traveled into the scanning area of the line scanner;

moving the line scanner in a perpendicular direction to the oversized document to capture indicia information disposed on the rear portion of the oversized document; and

combining the front portion indicia information with the rear portion indicia information without any substantial discontinuity between the two portions.

2. A method of determining document travel distance, comprising:

advancing a front portion of an oversized document a sufficient distance along a lateral scan path of a line scanner to provide a first portion of a single line of indicia information; and

calculating a translation vector indicative of a distance between a last row in said first portion of the single line of indicia information and a first row in a second portion of the single line of indicia information disposed on a rear portion of said oversized document.

3. A method of stitching together scanned indicia image information from a front portion and a rear portion of an oversized document, comprising:

advancing a scanned front portion of the oversized document a sufficient distance along a scanning line of a line scanner to capture a last row in a front portion of a line of scanned image information disposed on the front portion of the oversized document; and

advancing said line scanner in a scan path perpendicular to a direction traveled by the oversized document to capture a rear portion of the line disposed on the rear portion of the oversized document; and

combining said last row in the front portion of the line of scanned image information disposed on the front portion of the oversized document with said line of scanned information disposed on the rear portion without causing any substantial discontinuity between said front portion of the line and said rear portion of the line.

4. A method of scanning over-sized sheets of media having N rows of image information, comprising:

moving an over-sized sheet and scanner relative to one another to facilitate the scanning of image information disposed on said over-sized sheet;

scanning a row of image information for generating a set of pixels indicative of said row of image information;

scanning another row of image information for generating another set of pixels indicative of said another row of image information, said another row of image information being offset from said row of image information by a predetermined step size;

accumulating an absolute difference between pixels over a range of offsets to find a minimum error correlation value;

repeating said steps of moving, scanning, scanning and accumulating a sufficient number of times to accumulate a set of row offset values;

dividing said set of row of offset values by said predetermined step size to determine the total distance the over-sized sheet and scanner have moved relative to one another; and

repeating all of the preceding steps a sufficient number of times until the entire oversized sheet has been scanned.

5. A method of automatically scanning over-sized sheets of media fed from an automatic document feeder in portrait orientation utilizing a scanner adapted to scan standard-sized documents in landscape fashion by moving an optical scanning head in a direction transverse to a direction of travel of sheet media fed into the scanner by the automatic document feeder, comprising:

- picking an over-sized sheet of media from an input tray and propelling the sheet in a forward direction;
- advancing a first portion of the over-sized sheet into the scanner;
- scanning the first portion of the over-sized sheet in a single pass of the optical scanning head;
- generating a first digital image of the text and/or graphics on the first portion of the oversized media sheet;
- storing the first digital image in the memory;
- advancing a second remaining portion of the over-sized sheet into the scanner;
- scanning the second portion of the over-sized sheet in a single pass of the optical scanning head;
- generating a second digital image of the text and/or graphics on the second portion of the oversized media sheet;
- storing the second digital image in the memory;
- rotating and stitching the first and second digital images together to generate a third digital image representing the entire text and/or graphics on the over-sized media sheet;
- storing the third image in the memory; and
- propelling the scanned oversized sheet of media out of the scanner and into an output tray of the automatic document feeder.

6. The method of Claim 5, wherein the output of a sensor in a media path is used to detect the trailing edge of the oversized media sheet in order to register the first remaining portion of the media sheet on a transparent platen of the scanner in the appropriate position to allow the text and/or graphics on the first portion to be scanned.

7. A method of gathering indicia information from an oversized document, comprising:

- correlating each row (n) of a scanned image to a row captured later in time so as to provide an offset step function;
- accumulating an absolute difference between a range of offsets values; and
- dividing the accumulated offset values to provide a total distance vector value to

combine a rear half portion of the oversized document with a front half portion of the oversized document without any substantial discontinuity between the two halves of the document.

8. A method of gathering indicia information from an oversized document having a front half portion and a rear half portion, where the two portions in combination exceed the scanning area of a scanner, comprising:

- advancing the oversized document in a forward direction a sufficient distance into a scanning area to position the front half portion outside the scanning area of the scanner and the rear half portion in the scanning area of the scanner;

- moving the oversized document in a reverse direction in a series of predetermined intervals to capture each row of indicia information on the rear half portion of the document without capturing any indicia information on the front half portion of the document;

- moving the oversized document in a further reverse direction in another series of predetermined intervals to capture each row of indicia information on the front half portion of the document without capturing any indicia information on the rear half portion of the document; and

- combining the indicia information from the rear half of the oversized document with the indicia information from the front half of the oversized document without any substantial discontinuity between the two halves of the document.

9. A document scanning system, comprising:

- an input device having a line scanner and a document receiving area;

- an automatic document feeder mounted to said input device for moving an oversized document into said document receiving area, said document receiving area being sufficiently large to receive the whole of a undersized document but not sufficiently large for receiving the whole of said oversized document; and

- a control program for causing said automatic document feeder to move a front portion of said oversized document into said document receiving area and for causing said line scanner to travel along a rectilinear path of travel adjacent said document receiving area to facilitate the capturing of information disposed on the whole of the front portion of said oversized document;

- said control program for further causing said automatic document feeder to incrementally advance the front portion of said oversized document out of said document

receiving area along a path perpendicular to the path traveled by said line scanner and for causing said line scanner to be held in a stationary position during the advancing of the front portion to facilitate calculating a total translation vector between the front portion of said oversized document and a rear portion of said oversized document;

said control program still further causing said line scanner to again travel along said rectilinear path of travel to facilitate the capturing of information disposed on the whole of the rear portion of said oversized document and for using said translation vector to stitch together the captured information from the front portion and the rear portion of the oversized document without introducing any substantial discontinuity between the front portion and the rear portion.

10. In combination with an automatic document feeder and line scanner, a document control device, comprising:

a line scanner control for moving the line scanner in a rectilinear path of travel to capture in a first past indicia information disposed on a front portion of an oversized document and to capture in a second past indicia information disposed on a rear portion of said oversized document;

said line scanner control further for moving said line scanner to a determined stationary position beneath said front portion to facilitate the capturing of position information to calculate an incremental distance traveled by said front portion during a predetermined time period; and

an automatic document feeder control for moving said front portion and said rear portion in unison between said first past and said second pass to position said rear portion in a location that facilitates the capturing of indicia information disposed thereon.